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09/647309 42 CT/PTO 27 SEP 2000 PCT/FR99/00703

SEQUENCE LISTING

1

Information for SEQ ID NO: 1 rP40

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 344 amino acids, 1032 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

N - Met Lys Ala Ile Phe Val Leu Asn Ala Ala Pro Lys 5'- AIG AAA GCA AIT TIC GIA CIG AAT GOG GCT COG AAA Asp Asn Thr Trp Tyr Ala Gly Gly Lys Leu Gly Trp Ser Gln Tyr His Asp Thr CAT AAC ACC TOG TAT GOA GOT GOT AAA CTG GOT TOG TOC CAG TAT CAC GAC ACC Gly Phe Tyr Gly Asn Gly Phe Gln Asn Asn Gly Pro Thr Arg Asn Asp Gln GGT TTC TAC GGT AAC GGT TTC CAG AAC AAC AAC GGT GGG ACC GGT AAC GAT CAG Leu Gly Ala Gly Ala Phe Gly Gly Tyr Gln Val Asn Pro Tyr Leu Gly Phe Glu CIT COT COT COT COT COT COT TAC CAG GIT AAC COG TAC CITC COT TITC CAA Met Gly Tyr Asp Trp Leu Gly Arg Met Ala Tyr Lys Gly Ser Val Asp Asn Gly ATG GET TAT GAC TGG CTG GGC GET ATG GCA TAT AAA/GGC AGC GTT GAC AAC GGT 102 Ala Phe Lys Ala Gln Gly Val Gln Leu Thr Ala Lys Leu Gly Tyr Pro Ile Thr GCT TTC AAA GCT CAG GGC GTT CAG CTG ACC GCT AAA CTG GGT TAC GCG ATC ACT Asp Asp Leu Asp Ile Tyr Thr Arg Leu Gly Gly Met Val Trp Arg Ala Asp Ser GAC GAT CTG GAC ATC TAC ACC CGT CTG GOC GOC ATG GTT TGG GOC GCT GAC TCC 138 Lys Gly Asn Tyr Ala Ser Thr Gly Val Ser Arg Ser Glu His Asp Thr Gly Val AAA GOO AAC TAC GOT TOT ACC GOO GIT TOO GOT AGO GAA CAC GAC ACT GOO GIT 156 Ser Pro Val Phe Ala Gly Gly Val Glu Trp Ala Val Thr Arg Asp Ile Ala Thr TOO OOA GIA TIT GOT GOO GOO GIA GAG TOG GOT GIT ACT GOT GAC ATC GOT ACC Arg Leu Glu Tyr Gln Trp Val Asn Asn Ile Gly Asp Ala Gly Thr Val Gly Thr CET CIG GAA TAC CAG TOG GIT AAC AAC ATC GOC GAC GOG GOC ACT GIG GGT ACC Arg Pro Asp Asn Gly Met Leu Ser Leu Gly Val Ser Tyr Arg Phe Gly Gln Glu CGT CCT CAT AAC GGC ATG CTG AGC CTG GGC GTT TCC TAC CGC TTC GGT CAG GAA Asp Ala Ala Pro Val Val Ala Pro Ala Pro Ala Pro Ala Pro Glu Val Ala Thr CAT CCT CCA CCG GTT GTT CCT CCC CCT CCC CCT CCC CCT CCC CAA GTG CCT ACC 228 Lys His Phe Thr Leu Lys Ser Asp Val Leu Phe Asn Phe Asn Lys Ala Thr Leu AAG CAC TIC ACC CIG AAG TOT GAC GIT CIG TIC AAC TIC AAC AAA GOT ACC CIG Lys Pro Glu Gly Gln Gln Ala Leu Asp Gln Leu Tyr Thr Gln Leu Ser Asn Met AAA CCC GAA GGT CAG CCC CCC GAT CAG CTG TAC ACT CAG CTG AGC AAC ATG Asp Pro Lys Asp Gly Ser Ala Val Val Leu Gly Tyr Thr Asp Arg Ile Gly Ser GAT COG AAA GAC GGT TOO GCT GIT GIT CIG GGC TAC ACC GAC GGC ATC GGT TOO Glu Ala Tyr Asn Gln Gln Leu Ser Glu Lys Arg Ala Gln Ser Val Val Asp Tyr GAA GCT TAC AAC CAG CAG CTG TCT GAG AAA GGT GCT CAG TCC GTC GTT GAC TAC AAC CAG CAG CTG TCT GAG AAA GGT GCT CAG TCC GTC GTT GAC TAC 300 Leu Val Ala Lys Gly Ile Pro Ala Gly Lys Ile Ser Ala Arg Gly Met Gly Glu CTG GTT GCT AAA GGC ATC CCG GCT GGC AAA ATC TCC GCT GGC ACC ATG GGT GAA 318 Ser Asn Pro Val Thr Gly Asn Thr Cys Asp Asn Val Lys Ala Arg Ala Ala Leu TCC AAC CTG GTT ACT GGC AAC ACC TGT GAC AAC GTG AAA GCT CCC GCT GCC CTG ACC AAC GTG AAA GCT CCC GCT GCC CTG ACC AAC GTT ACT GGC ACC GTT GGT GGT GGT GGT GGT GGT GGT GAA GTT AAA GCC TAC AAA GCT GGT GAT GGT GGT GGT GGT GGT GGT GGT GAA GTT AAA GCC TAC AAA GCU Val Val Val Val Val Val Thr Gln Pro Gln Ala

Glu Val Val Thr Gln Pro Gln Ala GAA GTT GTA ACT CAG CCT CAG GCT

Information for SEQ ID NO: 2

G2A

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 101 amino acids, 303 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

130

N - The Val Lys The Lys Ash The The The The Gln The Gln Pro See Lys Pro The The Lys 5'- ACC GIG AAA ACC AAA AAC ACC ACC ACC CAG ACC CAG COG ACC AAA COG ACC AAA 150

Lys Asp His Lys Pro Gln Thr Thr Lys Pro Lys Glu Val Pro Thr Thr Lys Pro - C AAA GAT CAT AAA CCG CAG ACC AAA CCG AAA CAA GTG CCG ACC ACA ACC - 3'

Information for SEQ ID NO: 3 G2B

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 101 amino acids, 303 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

N - The Ala Gln The Lys Gly Arg Ile The The Ser The Gln The Asn Lys Pro Ser The Lys 5'- ACC GCG CAG ACC AAA GCC CGT ATC ACC ACC ACC ACC AAC AAA CCG ACC AAA 150

Ser Ang Ser Lys Asn Pro Pro Lys Lys Pro Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe ACC CET ACC AAA AAC CCG CCG AAA AAA CCG AAA CCG TAC CAC TAC CAC TTC CAA CTG TTC AAC TTC

171 173 176 182 186

AST LYS PTO LYS LYS PTO THE ILE LYS PTO THE AST LYS PTO THE THE LYS THE THE AST AND ANA COE ANA ANG ANA COE ACE ACE AND COE ACE ANA COE ACE ANA ACE ACE AND 213

Lys Arg Asp Pro Lys Thr Pro Ala Lys Met Pro Lys Lys Glu Ile Ile Thr Asn - C
AAA CGT CAT CCG AAA ACC CCG GCG AAA ATG CCG AAC AAC GAA ATC ACC ACC - 3'

Information for SEQ ID NO: 4 G2AδCys

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 101 amino acids, 303 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

130

N - The Val Lys The Lys Ash The The The The Gln The Gln Pro See Lys Pro The The Lys 5'- ACC GIG AAA ACC AAA AAC ACC ACG ACC CAG ACC CAG CCG ACC AAA CCG ACC AAA 150

Lys Asp His Lys Pro Gln Thr Thr Lys Pro Lys Glu Val Pro Thr Thr Lys Pro - C AAA GAT CAT AAA CCG CAG ACC ACC AAA CCG AAA GAA GTG CCG ACC ACC AAA CCG - 3'

Information for SEQ ID NO: 5 G2B&Cys

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 101 amino acids, 303 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

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130

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N - The Ala Gln The Lys Gly Arg Ile The The Ser The Gln The Asn Lys Pro Ser The Lys 5'- ACC GCG CAG ACC AAA GCC GCT ATC ACC ACC ACC CAG ACC AAA GCC ACC AAA 150

Ser Arg Ser Lys Asn Pro Pro Lys Lys Pro Lys Asp Asp Tyr His Pre Glu Val Pre Asn Pre AGC CGT AGC AAA AAC CGG CGG AAA AAA CGG AAA GAT GAT TAC CAC TIC GAA GIG TIC AAC TIC 171 173 176 186

Val Pro Ser Ser Ile Cys Gly Asn Asn Gln Leu Cys Lys Ser Ile Ser Lys Thr Ile Pro Ser GTG CCC AGC AGC AGC AGC AGC CAG CTG TCC AAA AGC ATC AGC AAA AGC ATC CCG AGC

192

Lys Arg Asp Pro Lys Thr Pro Ala Lys Met Pro Lys Lys Glu Ile Île Thr Asn - C AAA CGT GAT COG AAA ACC CCG GCG AAA ATG CCG AAG AAG GAA ATC ATC ACC AAC - 3'

Information for SEQ ID NO: 6

G1ACys

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 14 amino acids, 42 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

174 176 182 186 187

N - Ser Ile Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys - C 5'- AGC ATC TGC AGC AAC AAC COG ACC TGC TGG GGG ATC TGC AAA - 3'

Information for SEQ ID NO: 7 G1BCys

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 14 amino acids, 42 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

N - Ser Ile Cys Gly Asn Asn Gln Leu Cys Lys Ser Ile Cys Lys - C 5'- AGC ATC TGC GGC AAC AAC CAG CTG TGC AAA AGC ATC TGC AAA - 3'

Information for SEQ ID NO: 8 G1A

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 14 amino acids, 42 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

174 176 182 186 187
N - Ser Ile Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Ser Lys - C
5'- AGC ATC TGC AGC AAC AAC CCG ACC TGC TGG GCG ATC AGC AAA - 3'

G1B

Information for SEQ ID NO: 9

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 14 amino acids, 42 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

174 176 182 186 187
N - Ser Ile Cys Gly Asn Asn Gln Leu Cys Lys Ser Ile Ser Lys - C
5'- AGC ATC TGC GGC AAC AAC CAG CTG TGC AAA AGC ATC AGC AAA - 3'

Information for SEQ ID NO: 10 G1'A

SEQUENCE TYPE: amino acids

SEQUENCE LENGTH: 14 amino acids

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

N - Ser Ile Asp Ser Asn Asn Pro Thr Orn Trp Ala Ile Cys Lys - C

Information for SEQ ID NO: 11 G1'B

SEQUENCE TYPE: amino acids

SEQUENCE LENGTH: 14 amino acids

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

174 176 182 186 187 N - Ser Ile Asp Gly Asn Asn Gln Leu Orn Lys Ser Ile Cys Lys - C

Information for SEQ ID NO: 12 G1'AδC

SEQUENCE TYPE: amino acids

SEQUENCE LENGTH: 14 amino acids

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

WO 99/49892

174 176 182 186 187 N - Ser Ile Asp Ser Asn Asn Pro Thr Orn Trp Ala Ile Ser Lys - C

Information for SEQ ID NO: 13 G1'B&C

SEQUENCE TYPE: amino acids

SEQUENCE LENGTH: 14 amino acids

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

174 176 182 186 187 N - Ser Ile Asp Gly Asn Asn Gln Leu Orn Lys Ser Ile Ser Lys - C

Information for SEQ ID NO: 14 G2AδCF

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 101 amino acids, 303 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

130

N - Thr Val Lys Thr Lys Asn Thr Thr Thr Thr Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys 5'- ACC GTG AAA ACC AAA AAC ACC ACG ACC CAG ACC CAG CCG ACC AAA CCG ACC AAA

Gln Arg Gln Asn Lys Pro Pro Asn Lys Pro Asn Asn Asp Ser His Ser Glu Val Ser Asn Ser CAG CCT CAG AAC AAA CCC AAC AAA CCC AAC CAT TCC CAT TCC CAA GTC TCC AAC TCC 171 173 176 182 196

Val Pro Ser Ser Ile Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Ser Lys Arg Ile Pro Asn GTG CCG ACC ACC ATC TCC ACC AAC CCG ACC TCC TCG CCG ATC ACC AAA CCGT ATC CCG AAC 192

Lys Lys Pro Gly Lys Lys The The Lys Pro The Lys Pro The Lys Pro The Pre Lys The 1he Lys AAA AAA \cos \cos AAA AAA ACC ACC AAA AAA \cos ACC AAA AAA ACC ACC AAA AAA \cos ACC AAA AAA ACC ACC AAA AAA \cos ACC AAA AAA ACC ACC AAA

Lys Asp His Lys Pro Gln Thr Thr Lys Pro Lys Glu Val Pro Thr Thr Lys Pro - C AAA GAT CAT AAA CCG CAG ACC ACC AAA CCG AAA GAA GGG CCG ACC ACA AAA CCG - 3'

Information for SEQ ID NO: 15 G4A

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 17 amino acids, 51 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

171 173 176 182 186 187
N - Val Pro Cys Ser Ile Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys - C
5'- GIG CCC TGC AGC ATC TGC AGC AAC AAC CCG ACC TGC TGG CCG ATC TGC AAA - 3'

Information for SEQ ID NO: 16 G4A&C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 17 amino acids, 51 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

Information for SEQ ID NO: 17 G4B

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 17 amino acids, 51 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

171 173 176 182 186 187
N - Val Pro Cys Ser Ile Cys Gly Asn Asn Gln Leu Cys Lys Ser Ile Cys Lys - C
5' -GIG CCC TGC AGC ATC TGC GGC AAC AAC CAG CIG TGC AAA AGC ATC TGC AAA - 3'

Information for SEQ ID NO: 18 G4B δ C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 17 amino acids, 51 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

171 173 176 182 186 187
N - Val Pro Ser Ser Ile Cys Gly Asn Asn Gln Leu Cys Lys Ser Ile Ser Lys - C
5' -GIG CCC AGC AGC ATC TGC CGC AAC AAC CAG CTG TGC AAA AGC ATC AGC AAA - 3'

Information for SEQ ID NO: 19 G4'A

SEQUENCE TYPE: amino acids

SEQUENCE LENGTH: 17 amino acids

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

171 173 176 182 186 187 N - Val Pro Asp Ser Ile Asp Ser Asn Asn Pro Thr Orn Trp Ala Ile Orn Lys - C Information for SEQ ID NO: 20 G4'A&C

SEQUENCE TYPE: amino acids

SEQUENCE LENGTH: 17 amino acids

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

171 173 176 182 186 187 N - Val Pro Ser Ser Ile Asp Ser Asn Asn Pro Thr Orn Trp Ala Ile Ser Lys - C

Information for SEQ ID NO: 21 G4'B

SEQUENCE TYPE: amino acids

SEQUENCE LENGTH: 17 amino acids

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

171 173 176 182 186 187 N - Val Pro Asp Ser Ile Asp Gly Asn Asn Gln Leu Orn Lys Ser Ile Orn Lys - C

Information for SEQ ID NO: 22 G4'B&C

SEQUENCE TYPE: amino acids

SEQUENCE LENGTH: 17 amino acids

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

171 173 176 182 186 187 N - Val Pro Ser Ser Ile Asp Gly Asn Asn Gln Leu Orn Lys Ser Ile Ser Lys - C

Information for SEQ ID NO: 23 G200A

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 61 amino acids, 183 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

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WO 99

N - Gln Thr Gln Pro Ser Lys Pro Thr. Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn 5'- CAG ACC CAG CCG AGC AAA CCG ACC AAA CAG CGT CAG AAC AAA CCG CCG AAC 173 176 Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys AAA COG AAC AAC GAT TIC CAT TIC GAA GIG TIC AAC TIC GIG COG TGC AGC ATC TGC 182 186 Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys Arg Ile Pro Asn Lys Lys Pro Gly AGO AAC AAC COG AGO TIGO TIGO GOG ATIC TIGO AAA GOT ATIC COG AAC AAA AAA COG GOG 200 Lys Lys Thr Thr Thr - C AAA AAA ACC ACG ACC - 3'

Information for SEQ ID NO: 24 G198A

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 59 amino acids, 177 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn 5'- CAG ACC CAG CCG AGC AAA CCG ACC ACC AAA CAG CGT CAG AAC AAA CCG CCG AAC 173 176 Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys AAA CCG AAC AAC GAT TIC CAT TIC GAA GIG TIC AAC TIC GIG CCG TGC AGC ATC TGC 182 186 Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys Arg Ile Pro Asn Lys Lys Pro Gly AGC AAC AAC COG ACC TOC TOG GOG ATC TOC AAA CGT ATC COG AAC AAA AAA COG GOC 196 198 Lys Lys Thr - C AAA AAA ACC - 3'

Information for SEQ ID NO: 25 G196A

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 57 amino acids, 171 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

N - Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn 5'- CAG ACC CAG CCG AGC AAA CCG ACC AAA CAG CGT CAG AAC AAA CCG CCG AAC 173 Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys AAA CCG AAC AAC GAT TIC CAT TIC GAA GIG TIC AAC TIC GIG CCG TGC AGC AIC TGC 177 182 186 Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys Arg Ile Pro Asn Lys Lys Pro Gly ACC AAC AAC COS ACC TOC TOG COS ATC TOC AAA COT ATC COS AAC AAA AAA COS COC

Lys - C

196

AAA - 3'

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Information for SEQ ID NO: 26 G194A

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 55 amino acids, 165 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

AGC AAC AAC COG ACC TOC TOG GOG ATC TOC AAA CET ATC COG AAC AAA AAA COG - 31

Information for SEQ ID NO: 27 G192A

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 52 amino acids, 159 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys Arg Ile Pro Asn Lys - C AGC AAC AAC CUG ACC TGC TGG GGG ATC TGC AAA CGT ATC CUG AAC AAA - 3'

Information for SEQ ID NO: 28 G6A

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 51 amino acids, 153 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn 5'- CAG ACC CAG CCG AGC AAA CCG ACC AAA CAG CGT CAG AAC AAA CCG CCG AAC LYs Pro Asn Asn Asn Asn Phe His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys AAA CCG AAC AAC CAG TTC CAG TTC CAAC TTC GTG CCG TGC AGC ATC TGC

177 182 186 Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys Arg Ile Pro - C AGC AAC AAC COG ACC TGC TGG GGG ATC TGC AAA CGT ATC CGG - 3'

Information for SEQ ID NO: 29 G7A

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 33 amino acids, 99 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

158

173 N - Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile 5'- AAA COG AAC AAC GAT TIC CAT TIC GAA GIG TIC AAC TIC GIG COG TGC AGC ATC 182 186

Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys Arg Ile Pro - C TOC AGC AAC AAC COG ACC TOC TOG GOG ATC TOC AAA CGT ATC COG - 3'

Information for SEQ ID NO: 30

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 61 amino acids, 183 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

N - Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn 5'- CAG ACC CAG CCG AGC AAA CCG ACC AAA CAG CGT CAG AAC AAA CCG CCG AAC 158 176 Lys Pro Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys AAA CCS AAC AAC GAT TIC CAT TIC GAA GIG TIC AAC TIC GIG CCG AGC AGC ATC TGC 182 186 Ser Asn Asn Pro Thr Cys Trp Ala Ile Ser Lys Arg Ile Pro Asn Lys Lys Pro Gly AGC AAC AAC COG ACC TGG GGG ATC AGC AAA CGT ATC CGG AAC AAA AAA CGG GGC 196

Lys Lys Thr Thr Thr - C AAA AAA ACC ACG ACC - 31

Information for SEO ID NO: 31 G198AδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 59 amino acids, 177 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

WO 997-9892

N - Gin Thr Gin Pro Ser Lys Pro Thr Thr Lys Gin Arg Gin Asn Lys Pro Pro Asn 5'- CAG ACC CAG CCG AGC AAA CCG ACC AAA CAG CGT CAG AAC AAA CCG CCG AAC

173 176

Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys AAA CUG AAC AAC CAT TIC CAT TIC GAA GIG TIC AAC TIC GIG CUG AGC AGC ATC TGC

182 186

Ser Asn Asn Pro Thr Cys Trp Ala Ile Ser Lys Arg Ile Pro Asn Lys Lys Pro Gly AGC AAC AAC CUE ACC TGG TGG GCG ATC AGC AAA CET ATC CCG AAC AAA AAA CCG GGC

Lys Lys Thr - C AAA AAA ACC - 3'

Information for SEQ ID NO: 32 G196AδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 57 amino acids, 171 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

N - Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn 5' - CAG ACC CAG CCC AGC AAA CCC ACC AAA CAG CCT CAG AAC AAA CCC CCC AAC 173 176

Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys AAA CUE AAC AAC GAT TIC CAT TIC GAA GIG TIC AAC TIC GIG COG AGC AGC ATC TGC 182 177 186

Ser Asn Asn Pro Thr Cys Trp Ala Ile Ser Lys Arg Ile Pro Asn Lys Lys Pro Gly AGO AAC AAC COG ACC TOC TOG COG ATC AGC AAA COT ATC COG AAC AAA AAA COG COC 196

Lys - C AAA - 3'

Information for SEQ ID NO: 33

G194AδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 55 amino acids, 165 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

N - Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn 5'- CAG ACC CAG CCG ACC AAA CCG ACC ACC AAA CAG CGT CAG AAC AAA CCG CCG AAC Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys AAA CCG AAC AAC GAT TTC CAT TTC GAA GTG TTC AAC TTC GTG CCG AGC AGC ATC TGC 182 186 194 Ser Asn Asn Pro Thr Cys Trp Ala Ile Ser Lys Arg Ile Pro Asn Lys Lys Pro - C

ASC AAC AAC COE ACC TOC TOE COE ATC AGC AAA CET ATC COE AAC AAA AAA COE - 3'

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Information for SEQ ID NO: 34 G192A&C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 53 amino acids, 159 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

Information for SEQ ID NO: 35 G6A&C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 51 amino acids, 153 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Gln Thr Gln Pro Ser Lys Pro Thr Thr Lys Gln Arg Gln Asn Lys Pro Pro Asn 5'- CAG ACC CAG CCG AGC AAA CCG ACC AAA CAG CGT CAG AAC AAA CCG CAG AAC AAA CCG ACC AAA CAG CGT CAG AAC AAA CCG CCG AAC LSS 173 176

Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys AAA CCG AAC AAC CAG TTC CAT TTC CAA CTG TTC AAC TTC CGG CCG ACC ACC ATC TCC TCC CAG ASN Asn Asn Pro Thr Cys Trp Ala Ile Ser Lys Arg Ile Pro - C

ACC AAC AAC CCG ACC TCC TCC CCG ACC AAC CCT ATC CCG - 3'

Information for CEO ID NO. 36 C7350

Information for SEQ ID NO: 36 G7A&C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 33 amino acids, 99 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

173
N - Lys Pro Asn Asn Asp Phe His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile
5'- AAA CCG AAC AAC GAT TTC CAT TTC GAA GTG TTC AAC TTC GTG CCG AGC ACC ATC
176
182
186
190
Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Ser Lys Arg Ile Pro - C
1GC AGC AAC AAC CCG ACC TGC CGG CCG ATC AGC AAA CGT ATC CCG - 3'

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Information for SEQ ID NO: 37 G200B

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 61 amino acids, 183 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

160 173 176

Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys Gly Asn Asn Gln AAA GAT GAT TAC CAC TIC GAA GIG TIC AAC TIC GIG CCC TGC AGC ATC TGC GGC AAC AAC CAG 182 186

Information for SEQ ID NO: 38 G198B

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 59 amino acids, 177 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Ser Thr Gln Thr Asn Lys Pro Ser Thr Lys Ser Arg Ser Lys Asn Pro Pro Lys Lys Pro 5'- AGC AGC CAG AGC AAA AGC AGC AGC AAA AGC CGT AGC AAA AAC CGG CGG AAA AAA CGG 160 173 176

Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys Gly Asn Asn Gln AAA GAT GAT TAC CAC TIC GAA GIG TIC AAC TIC GIG CCC TGC AGC AIC TGC GGC AAC AAC CAG 182 186

Leu Cys Lys Ser Ile Cys Lys Thr Ile Pro Ser Asn Lys Pro Lys Lys Lys Pro - C CTG TGC AAA AGC ATC TGC AAA AGC ATC CGG AGC AAA AAA CGG AAA AAG AAA CGG - 3'

Information for SEQ ID NO: 39 G196B

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 57 amino acids, 171 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear



Lys Asp Asp Tyr His Fre Glu Val Fre Asn Fre Val Pro Cys Ser Ile Cys Gly Asn Asn Gln AAA GAT GAT TAC CAC TIC GAA GIG TIC AAC TIC GIG COC TGC AGC AIC TGC GGC AAC AAC CAG 182 186 196

Leu Cys Lys Ser Ile Cys Lys Thr Ile Pro Ser Asn Lys Pro Lys Lys - C CTG TGC AAA AGC ATC TGC AAA AGC ATC CGG AGC AAC AAA CGG AAA AAG - 3'

Information for SEQ ID NO: 40 G194B

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 55 amino acids, 165 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

160 173 176

Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Cys Ser I le Cys Gly Asn Asn Gln AAA GAT GAT TAC CAC TTC GAA GTG TTC AAC TTC GTG CCC TCC AGC ATC TCC GCC AAC CAG 182 194

Information for SEQ ID NO: 41 G192B

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 53 amino acids, 159 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys Gly Asn Asn Gln AAA GAT GAT TAC CAC TIC GAA GIG TIC AAC TIC GIG COC TOC AGC ATC TOC GCC AAC AAC CAG 182 186 192

Leu Cys Lys Ser Ile Cys Lys Thr Ile Pro Ser Asn - C CIG TGC AAA AGC ATC TGC AAA AGC ATC GGG AGC AAC - 3'



Information for SEQ ID NO: 42 G6B

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 51 amino acids, 153 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys Gly Asn Asn Gln AAA GAT GAT TAC CAC TTC GAA GTG TTC AAC TTC GTG CCC TGC AGC ATC TGC GCC AAC AAC CAG 182 186 190

Leu Cys Lys Ser Ile Cys Lys Thr Ile Pro - C CIG TGC AAA AGC ATC TGC AAA AGC ATC CGG - 3'

Information for SEQ ID NO: 43 G7B

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 33 amino acids, 99 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

158 173 176
N - Lys Pro Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Cys Ser Ile Cys Gly
5'- AAA COG AAA GAT GAT TAC CAC TTC GAA GTG TTC AAC TTC GTG COC TCC AGC ATC TCC GGC

182 186 190 Asn Asn Gln Leu Cys Lys Ser Ile Cys Lys Thr Ile Pro - C AAC AAC CAG CTG TEE AAA ACC ATC TEC AAA ACC ATC \cos - 3*

Information for SEQ ID NO: 44 G200BdC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 61 amino acids, 183 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys Gly Asn Asn Gln AAA CAT GAT TAC CAC TIC GAA GIG TIC AAC TIC GIG COC ACC ACC ACC TIC GCC AAC AAC CAG 182 200

Leu Cys Lys Ser Ile Ser Lys Thr Ile Pro Ser Asn Lys Pro Lys Lys Pro Thr Ile- C CTG TGC AAA AGC ATC AGC AAA AGC ATC COG AGC AAC AAA COG AAA AAG AAA COG ACC ATC- 3' Information for SEQ ID NO: 45

G198BδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 59 amino acids, 177 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Ser Thr Gln Thr Asn Lys Pro Ser Thr Lys Ser Arg Ser Lys Asn Pro Pro Lys Lys Pro 5'- ACC ACC CAG ACC AAA CCC ACC AAA AAC CCC AAA AAC CCC AAA AAA CCC AAA AAA CCC AAA AAC CCC AAA AAC CCC AAA AAA CCC AAA AAC CCC AAA AAC CCC AAA AAA CCC AAA AAC CCC AAA AAA CCC AAA AAC CCC AAA AAC CCC AAA AAC CCC AAA AAA CCC AAA AAC CCC AAA AAA CCC AAA AAC CCC AAA AAC CCC AAA AAA CCC AAA AAC CCC AAA AAC CCC AAA AAA CCC AAA AAC CCC AAA AAC CCC AAA AAC CCC AAA AAA CCC AAA AAC CCC AAA AAC CCC AAA AAA CCC AAA AAC CCC AAA AAA CCC AAA AAC CCC AAAA AAC CCC AAA AAC CCC AAA AAC CCC AAA AAC CCC AAA AAC CCC AAAA AAC CCC AAA

60 173 176

Lys Asp Asp Tyr His Phe Giu Val Phe Ash Phe Val Pro Ser Ser Ile Cys Gly Ash Ash Gin AAA GAT GAT TAC CAC TIC GAA GIG TIC AAC TIC GIG COC AGC AGC AGC AAC CAG 182 186

Leu Cys Lys Ser Ile Ser Lys Thr Ile Pro Ser Asn Lys Pro Lys Lys Lys Pro - C CIG TEC AAA ACC ATC ACC AAA ACC ATC COG ACC AAC AAA COG AAA AAG AAA COG - 3'

Information for SEQ ID NO: 46

G196BδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 57 amino acids, 171 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Ser Thr Gln Thr Asn Lys Pro Ser Thr Lys Ser Arg Ser Lys Asn Pro Pro Lys Lys Pro 5'- AGC ACC CAG ACC AAC AAA CCG AGC ACC AAA ACC CGT AGC AAA AAC CCG CCG AAA AAA CCG 160 173 176

Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys Gly Asn Asn Gln AAA GAT GAT TAC CAC TIC GAA GIG TIC AAC TIC GIG CCC AGC AGC AGC TIC GAC AAC CAG

182 186

196

Leu Cys Lys Ser Ile Ser Lys Thr Ile Pro Ser Asn Lys Pro Lys Lys - C CIG TCC AAA ACC ATC ACC AAA ACC ATC COG ACC AAC AAA COG AAA AAG - 3'

Information for SEQ ID NO: 47

G194BδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 55 amino acids, 165 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

N - Ser Thr Gln Thr Asn Lys Pro Ser Thr Lys Ser Arg Ser Lys Asn Pro Pro Lys Lys Pro 5'- ACC ACC CAG ACC AAC AAA ACC GCT ACC AAA AAC CCC AAA AAA CCC 160 173 176

Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Ser Ser I le Cys Gly Asn Asn Gln AAA GAT GAT TAC CAC TTC GAA GTG TTC AAC TTC GTG CCC ACC ACC ATC TGC GGC AAC AAC CAG 182 186 194

Leu Cys Lys Ser Ile Ser Lys Thr Ile Pro Ser Asn Lys Pro - C CTG TGC AAA AGC ATC AGC AAA AGC ATC COG AGC AAC AAA COG - 3'

Information for SEQ ID NO: 48 G192BδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 53 amino acids, 159 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys Gly Asn Asn Gln AAA GAT GAT TAC CAC TTC GAA GTG TTC AAC TTC GTG CCC AGC AGC ATC TGC GGC AAC AAC CAG 182 186 192

Leu Cys Lys Ser Ile Ser Lys Thr Ile Pro Ser Asn - C CIG TGC AAA AGC ATC AGC AAA AGC ATC COG AGC AAC - 3'

Information for SEQ ID NO: 49 G6B δ C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 51 amino acids, 153 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Ser Thr Gln Thr Asn Lys Pro Ser Thr Lys Ser Arg Ser Lys Asn Pro Pro Lys Lys Pro 5'- AGC AGC CAG AGC AAA COG AGC AGC AGA AGC CGT AGC AAA AAC COG COG AAA AAA COG 173 176

Lys Asp Asp Tyr His Phe Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys Gly Asn Asn Gln AAA GAT GAT TAC CAC TIC GAA GIG TIC AAC TIC GIG COC AGC AGC AIC TGC GGC AAC AAC CAG

182 186 190

Leu Cys Lys Ser Ile Ser Lys Thr Ile Pro - C CIG TEC AAA ACC AIC ACC AAA ACC AIC CCG - 3' 12 - 12

WO 99/49892

Information for SEQ ID NO: 50 G7BδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 33 amino acids, 99 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

173 176

N - Lys Pro Lys Asp Asp Tyr His The Glu Val Phe Asn Phe Val Pro Ser Ser Ile Cys Gly 5'- AAA COG AAA GAT GAT TAC CAC TTC GAA GTG TTC AAC TTC GTG COC AGC AGC ATC TCC GCC

182 186 Asn Asn Gln Leu Cys Lys Ser Ile Ser Lys Thr Ile Pro - C

AAC AAC CAG CTG TGC AAA AGC ATC AGC AAA ACC ATC COG - 3'

Information for SEO ID NO: 51 G2V

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 101 amino acids, 303 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

N - Gln Asn Arg Lys Ile Lys Gly Gln Ser Thr Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn 5'- CAA AAC AGA AAA ATC AAA GGT CAA TCA ACA CTA CCA GCC ACA AGA AAA CCA CCA ATT AAT

Pro Ser Gly Ser Ile Pro Pro Glu Asn His Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr CCA TCA GGA AGC ATC CCA CCA GAA AAC CAT CAA GAC CAC AAC AAC TTC CAA ACA CTC CCC TAT 173 176 182 186

Val Pro Cys Ser Thr Cys Glu Gly Asn Leu Ala Cys Leu Ser Leu Cys His Ile Glu Thr Glu GIT OUR TOU AGT ACA TIGT GAA GGT AAT CIT GCA TOU TIA TOA CIC TOU CAT ATT GAG ACG GAA

Arg Ala Pro Ser Arg Ala Pro Thr Ile Thr Leu Lys Lys Thr Pro Lys Pro Lys Thr Thr Lys AGA GCA CCA AGC AGA GCA CCA ACA ATC AGC CTC AAA AAG ACA CCA AAA CCA AAA ACC ACA AAA

Lys Pro Thr Lys Thr Thr Lie His His Arg Thr Ser Pro Glu Thr Lys Leu Gln - C ANG COA ACC ANG ACA ACA ATC CAT CAC AGA ACC AGA ACC AAA CTG CAA - 3'

Information for SEQ ID NO: 52 G2VδC

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 101 amino acids, 303 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

130

N - Gln Asn Arg Lys Ile Lys Gly Gln Ser Thr Lew Pro Ala Thr Arg Lys Pro Pro Ile Asn 5'- CAA AAC AGA AAA ATC AAA GGT CAA TCA ACA CTA GCA GCC ACA AGA AAA GCA GCA ATT AAT

WO 99/49892

150

Pro Ser Gly Ser Ile Pro Pro Glu Asn His Gln Asp His Asn Asn Fhe Gln Thr Leu Pro Tyr CCA TCA GGA ACC ATC CCA CCA GAA AAC CAT CAA GAC CAC AAC AAC ATC CAA ACA CTC CCC TAT 171 173 176 182 186

Val Pro Ser Ser Thr Cys Glu Gly Asn Leu Ala Cys Leu Ser Leu Ser His Ile Glu Thr Glu GTT CCC AGC AGT ACA TGT GAA GGT AAT CTT GCA TGC TTA TCA CTC AGC CAT ATT GAG AGG GAA 192

Arg Ala Pro Ser Arg Ala Pro Thr Lle Thr Leu Lys Lys Thr Pro Lys Pro Lys Thr Thr Lys AGA GCA CCA AGC AGA GCA CCA AGA ATC ACC CTC AAA AAG ACA CCA AAA CCA AAA ACC ACA AAA 213

Lys Pro Thr Lys Thr Thr Ile His His Arg Thr Ser Pro Glu Thr Lys Leu Gln - C AAG CCA ACC AAG ACA ACA ACC CAT CAC AGA ACC AGA ACC AGA ACC AAA CTG CAA - 3'

Information for SEQ ID NO: 53 G200V

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 61 amino acids, 183 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His 5'- CTA CCA GCC ACA AGA AAA CCA CCA ATT AAT CCA TCA GCA AGC ATC CCA CCA GAA AAC CAT 160 173 176

Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Cys Ser Thr Cys Glu Gly Asn Leu CAA GAC CAC AAC AAC TIC CAA ACA CIC COC TAT GIT COC TGC AGT ACA TGT GAA GGT AAT CIT 182 186 200

Information for SEQ ID NO: 54 G198V

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 59 amino acids, 177 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His 5'- CIA CCA GCC ACA AGA AAA CCA CCA ATT AAT CCA TCA GGA AGC ATC CCA CCA GAA AAC CAT 160 173 176

Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Cys Ser Thr Cys Glu Gly Asn Leu CAA GAC CAC AAC AAC TIC CAA ACA CIC CCC TAT GIT CCC TGC AGT ACA TGT GAA GGT AAT CIT 182

Ala Cys Leu Ser Leu Cys His Ile Glu Thr Glu Arg Ala Pro Ser Arg Ala Pro - C GCA TGC TTA TCA CTC TGC CAT ATT GAG AGG GAA AGA GCA CCA AGC AGA GCA CCA - 3' Information for SEQ ID NO: 55 G196V

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 57 amino acids, 171 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His 5'- CTA CCA GCC ACA AGA AAA CCA CCA ATT AAT CCA TCA GGA AGC ATC CCA CCA GAA AAC CAT 160 173 176

Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Cys Ser Thr Cys Glu Gly Asn Leu CAA GAC CAC AAC AAC TTC CAA ACA CTC CCC TAT GTT CCC TGC AGT ACA TGT GAA GGT AAT CTT 186 196

Ala Cys Leu Ser Leu Cys His Ile Glu Thr Glu Arg Ala Pro Ser Arg - C GCA TGC TTA TCA CTC TGC CAT ATT GAG ACG GAA AGA GCA CCA AGC AGA - 3'

Information for SEQ ID NO: 56 G194V

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 55 amino acids, 165 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His 5'- CTA CCA GCC ACA AGA AAA CCA CCA ATT AAT CCA TCA GGA AGC ATC CCA CCA GAA AAC CAT 160

Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Cys Ser Thr Cys Glu Gly Asn Leu CAA GAC CAC AAC AAC TIC CAA ACA CIC COC TAT GIT COC TGC AGT ACA TGT GAA GGT AAT CIT 182 186 194

Ala Cys Leu Ser Leu Cys His Ile Glu Thr Glu Arg Ala Pro - C GCA TGC TTA TCA CTC TGC CAT ATT GAG ACG GAA AGA GCA CCA - 3'

Information for SEQ ID NO: 57 G192V

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 53 amino acids, 159 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

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140

N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His 5'- CTA CCA GCC ACA AGA AAA CCA CCA ATT AAT CCA TCA GGA AGC ATC CCA CCA GAA AAC CRT 160 173 176

Gln Asp His Asn Asn Fhe Gln Thr Leu Pro Tyr Val Pro Cys Ser Thr Cys Glu Gly Asn Leu CAA GAC CAC AAC AAC TIC CAA ACA CIC COC TAT GIT COC TGC AGT ACA TGT GAA GGT AAT CIT 182 186 192

Ala Cys Leu Ser Leu Cys His Ile Glu Thr Glu Arg - C GCA TGC TTA TCA CTC TGC CAT ATT GAG AGG GAA AGA - 3'

Information for SEQ ID NO: 58 G6V

SEQUENCE LENGTH: 51 amino acids, 153 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His 5'- CIA CCA GCC ACA AGA AAA CCA CCA ATT AAT CCA TCA GCA ACC ATC CCA CCA GAA AAC CAT 160 173 176

Gin Asp His Asn Asn Phe Gin Thr Leu Pro Tyr Val Pro Cys Ser Thr Cys Glu Gly Asn Leu CAA GAC CAC AAC AAC TTC CAA ACA CTC CCC TAT GTT CCC TGC AGT ACA TGT GAA GGT AAT CTT 182 186 190

Ala Cys Leu Ser Leu Cys His Ile Glu Thr - C GCA TGC TTA TCA CTC TGC CAT ATT GAG AGG - 3'

Information for SEQ ID NO: 59 G7V

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 33 amino acids, 99 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

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158 173 176
N - Asn His Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Cys Ser Thr Cys
5'- APC CAT CAA GAC CAC AAC AAC TIC CAA ACA CIC CCC TAT GIT CCC TGC AGT ACA TGT
182 186 190

Glu Gly Asn Leu Ala Cys Leu Ser Leu Cys His Ile Glu Thr - C GAA GGT AAT CIT GCA TGC TTA TCA CIC TGC CAT ATT GAG AGG - 3'

Information for SEQ ID NO: 60 G200 $V\delta$ C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 61 amino acids, 183 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His 5'- CTA CCA GCC ACA AGA AAA CCA CCA ATT AAT CCA TCA GGA AGC ATC CCA CCA GAA AAC CAT 160 173 176

Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Ser Ser Thr Cys Glu Gly Asn Leu CAA GAC CAC AAC AAC TIC CAA ACA CIC COC TAT GIT COC AGC AGT ACA TGI GAA GGI AAT CIT 182 186 200

Information for SEQ ID NO: 61 G198V δ C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 59 amino acids, 177 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His 5'- CTA CCA GCC ACA ACA AAA CCA CCA ATT AAT CCA TCA GCA ACC ATC CCA CCA GAA AAC CAT 160 173 176

Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Ser Ser Thr Cys Glu Gly Asn Leu CAA GAC CAC AAC AAC TIC CAA ACA CIC COC TAT GIT COC AGC AGT ACA TGT GAA GGT AAT CTT 182 186 198

Ala Cys Leu Ser Leu Ser His Ile Glu Thr Glu Arg Ala Pro Ser Arg Ala Pro - C GCA TGC TTA TCA CTC AGC CAT ATT GAG AGG GAA AGA GCA GCA GCA GCA GCA CCA - 3'

Information for SEQ ID NO: 62 G196 $V\delta$ C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 57 amino acids, 171 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His 5'- CTA CCA CCC ACA AGA AAA CCA CCA ATT AAT CCA TCA GGA ACC ATC CCA CCA GAA AAC CAT 160 173 176

Gln Asp His Asn Asn Fhe Gln Thr Leu Pro Tyr Val Pro Ser Ser Thr Cys Glu Gly Asn Leu CAA GAC CAC AAC AAC TIC CAA ACA CIC COC TAT GIT COC AGC AGT ACA TGT GAA GGT AAT CIT 182 186 196

Ala Cys Leu Ser Leu Ser His Ile Glu Thr Glu Arg Ala Pro Ser Arg - C GCA TGC TTA TCA CTC AGC CAT ATT GAG AGG GAA AGA GCA CCA AGC AGA - 3'

Information for SEQ ID NO: 63 G194 $V\delta$ C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 55 amino acids, 165 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His 5'- CTA CCA GCC ACA AGA AAA CCA CCA ATT AAT CCA TCA GGA AGC ATC CCA CCA GAA AAC CAT 160 173 176

Gln Asp His Asn Asn Fhe Gln Thr Leu Pro Tyr Val Pro Ser Ser Thr Cys Glu Gly Asn Leu CAA GAC CAC AAC AAC TIC CAA ACA CIC CCC TAT GIT CCC AGC AGT ACA TGT GAA GGT AAT CIT 182 186 194

Ala Cys Leu Ser Leu Ser His Ile Glu Thr Glu Arg Ala Pro - C GCA TGC TTA TCA CTC AGC CAT ATT GAG AGG GAA AGA GCA CCA - 3'

Information for SEQ ID NO: 64 G192 $V\delta C$

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 53 amino acids, 159 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His 5'- CTA CCA GCC ACA AGA AAA CCA CCA ATT AAT CCA TCA GCA AGC ATC CCA CCA GAA AAC CAT 160 173 176

Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Ser Ser Thr Cys Glu Gly Asn Leu CAA GAC CAC AAC AAC TIC CAA ACA CIC COC TAT GIT COC AGC AGT ACA TGT GAA GGT AAT CIT 182 186 192

Ala Cys Leu Ser Leu Ser His Ile Glu Thr Glu Arg - C GCA TGC TTA TCA CTC AGC CAT ATT GAG ACG GAA AGA - 3'

Information for SEQ ID NO: 65 G6V δ C

SEQUENCE LENGTH: 51 amino acids, 153 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

140

N - Leu Pro Ala Thr Arg Lys Pro Pro Ile Asn Pro Ser Gly Ser Ile Pro Pro Glu Asn His 5'- CTA CCA GCC ACA AGA AAA CCA CCA ATT AAT CCA TCA GGA ACC ATC CCA CCA GAA AAC CAT

Gln Asp His Asn Asn Fhe Gln Thr Leu Pro Tyr Val Pro Ser Ser Thr Cys Glu Gly Asn Leu CAA CAC CAC AAC AAC TTC CAA ACA CTC CCC TAT GTT CCC AGC AGT ACA TGT GAA GGT AAT CTT 182 186 190

Ala Cys Leu Ser Leu Ser His Ile Glu Thr - C GCA TGC TTA TCA CTC AGC CAT ATT GAG AGG - 3'

Information for SEQ ID NO: 66 G7V δ C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 33 amino acids, 99 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

158 173 176

N - Asn His Gln Asp His Asn Asn Phe Gln Thr Leu Pro Tyr Val Pro Ser Ser Thr Cys 5'- APC CRT CAA GPC CAC APC APC TIC CAA ACA CIC CCC TRT GIT CCC AGC AGT ACA TGT

182 186 19

Glu Gly Asn Leu Ala Cys Leu Ser Leu Ser His Ile Glu Thr - C GAA GGT AAT CIT GCA TGC TIA TCA CIC AGC CAT ATT GAG AGG - 3'

Information for SEQ ID NO: 67

G4V

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 17 amino acids, 51 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

N - Val Pro Cys Ser Thr Cys Glu Gly Asn Leu Ala Cys Leu Ser Leu Cys His - C

5'- GIT CCC TGC AGT ACA TGT GAA GGT AAT CIT GCA TGC TIA TCA CITC TGC CAT - 3'

Information for SEQ ID NO: 68 G4V δ C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 17 amino acids, 51 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

. 171 173 176 182 186 187

N - Val Pro Ser Ser Thr Cys Glu Gly Asn Leu Ala Cys Leu Ser Leu Ser His - C 5'- GIT CCC AGC AGT ACA TGT GAA GGT AAT CIT GCA TGC TIA TCA CTC AGC CAT - 3'

Information for SEQ ID NO: 69 G4'V

SEQUENCE TYPE: amino acids

SEQUENCE LENGTH: 17 amino acids

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

171 173 176 182 186 187 N - Val Pro Asp Ser Thr Asp Glu Gly Asn Leu Ala Om Leu Ser Leu Om His - C

Information for SEQ ID NO: 70 $G4'V\delta C$

SEQUENCE TYPE: amino acids

SEQUENCE LENGTH: 17 amino acids

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

171 173 176 182 186 187 N - Val Pro Ser Ser Thr Asp Glu Gly Asn Leu Ala Orn Leu Ser Leu Ser His - C

Information for SEQ ID NO: 71 G1V

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 14 amino acids, 42 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

N - Ser Thr Cys Glu Gly Asn Leu Ala Cys Leu Ser Leu Cys His - C

5' - AGT ACA TGT GAA GGT AAT CTT GCA TGC TTA TCA CTC TGC CAT - 3'

Information for SEQ ID NO: 72 G1V δ C

SEQUENCE TYPE: amino acids and nucleotides

SEQUENCE LENGTH: 14 amino acids, 42 nucleotides

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

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N - Ser Thr Cys Glu Gly Asn Leu Ala Cys Leu Ser Leu Ser His - C

5'- AGT ACA TGT GAA GGT AAT CTT GCA TGC TTA TCA CTC AGC CAT - 3'

Information for SEQ ID NO: 73 $G1'V\delta C$

SEQUENCE TYPE: amino acids

SEQUENCE LENGTH: 14 amino acids

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

N - Ser Thr Asp Glu Gly Asn Leu Ala Orn Leu Ser Leu Ser His - C

Information for SEQ ID NO: 74 G1'

SEQUENCE TYPE: amino acids



PCT/FR99/00703

SEQUENCE LENGTH: 15 amino acids

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: peptide

174 176 182 186 187

N - Ser Ile Asp Ser Asn Asn Pro Thr Orn Trp Ala Ile Ser Lys Cys - C